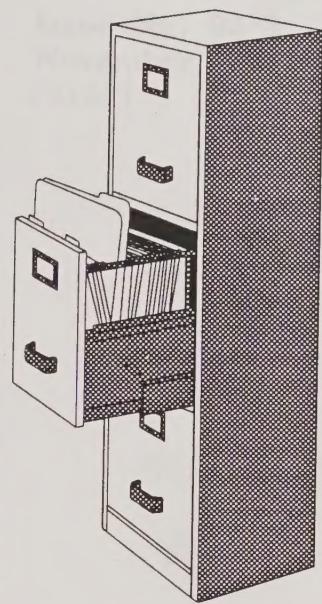
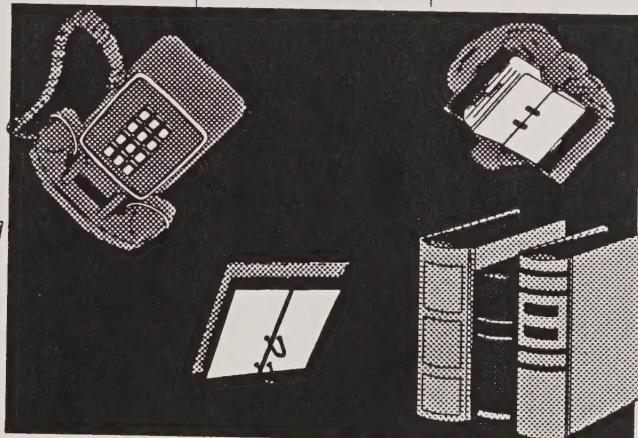
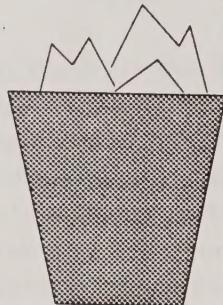
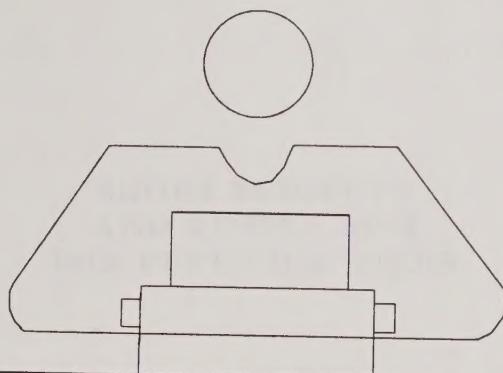
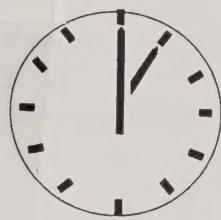


## **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.





## **SHORT SUBJECTS AND TIMELY TIPS FOR PESTICIDE USERS**

**1993**

United States  
Department of  
Agriculture



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SHORT SUBJECTS  
AND TIMELY TIPS  
FOR PESTICIDE USERS

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## NATIONAL PESTICIDE-USE MANAGEMENT TRAINING

A reminder that the 4th National Pesticide-Use Management Training Course will be held at Pinal Air Park, Marana, Arizona, March 16-30, 1994. The course, presented in four modules, will include new and updated information and approaches including ecosystem management panel discussions and an ecosystem field trip. Students will have the option of staying at a Tucson hotel or at Pinal Air Park. For course details (course schedule and application) contact Region/Area/Station pesticide coordinators, or:

CONTACT: JACK BARRY (CA)	(916) 551-1715
ROGER CORNER (AZ)	(602) 670-6414
JULIE WEATHERBY (ID)	(208) 364-4226
ED MONNIG (MT)	(406) 329-3134
JIM BROWN (GA)	(404) 347-2961
JIM HADFIELD (OR)	(503) 326-2728

## NEW DEER REPELLING DEVICE

A new deer repelling device, "Plant Pro-Tec (Garlic) Units," was recently registered by the U.S. Environmental Protection Agency (EPA). We have no data regarding the effectiveness of this product, although testimonial reports are positive. The registrant, Plant Pro-Tec, Inc., has 18 months to provide efficacy data in support of the conditional registration. Currently, personnel from USDA, Animal and Plant Health Inspection Service, Forest Animal Damage Control Research Station, Olympia, Washington, are conducting efficacy testing.

Although this device is being produced in California and is conditionally registered by EPA, the product is not yet registered in California. This means that the product may not be purchased or used in California. Other Regions may be interested in testing this product. If interested, contact Dr. Gerald A. Walters, Plant Pro-Tec, Inc., Post Office Box 902, Palo Cedro, California 96073 or call (916) 547-5450. The registrant is pursuing California registration.

CONTACT: JOHN BORRECCO (CA)	(415) 705-2873
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## **EPA RESPONDS TO FPM'S REQUEST FOR CLARIFICATION ON PESTICIDE REGULATION 93-3**

Recently, Forest Pest Management Acting Director Mel Weiss received a phone call from Mr. Phil Hutton, Product Manager for Insecticide Registration with EPA, concerning FPM's written request to EPA for clarification on a recently issued Pesticide Regulation Notice PR #93-3 concerning labeling requirements prohibiting application of pesticides to water. The Forest Service requested clarification on products used in forest insect suppression and eradication programs; specifically, *Bacillus thuringiensis* (Bt), TM Biocontrol-1, and Gypchek. EPA informed the Forest Service that PR Notice #93-3 does *not* apply to Forest Service applications for these pesticides. Had the PR notice applied, it would have seriously affected future Forest Service pesticide applications, such as Gypsy moth suppression projects. Once EPA provides written confirmation of this information, the Washington Office will forward it to the field.

CONTACT: JESUS COTA (DC)	(202) 205-1600
DAVE THOMAS (DC)	(202) 205-1600

### **REGISTRATION STATUS OF MCH AND REREGISTRATION OF GYPCHEK AND TM BIOCONTROL**

EPA has informed the Washington Office that the registration package submitted to EPA by the Forest Service in April 1993 for MCH, a bark beetle pheromone, should complete "initial review" by early December, and optimistically that full registration could be issued in February 1994. The Forest Service was also informed that TM-Biocontrol 1 and Gypchek are officially in Phase 4 of the reregistration process, and that reregistration could be complete by the end of the year. EPA has requested a data call-in on Gypchek and TM-Biocontrol 1, and the Washington Office is currently proceeding with a data search and will request a waiver so that reregistration can be completed.

CONTACT: DAVE THOMAS (DC)	(202) 205-1600
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**HOUSE SUBCOMMITTEE ON ENERGY, ENVIRONMENT AND  
NATURAL RESOURCES COMMITTEE  
ON GOVERNMENT OPERATIONS**

On October 29 hearing testimony for the House Subcommittee on Energy, Environment and Natural Resources, Chaired by Mr. Mike Synar, was provided by Deputy Secretary Richard Rominger, USDA, Assistant Administrator Lynn Goldman, EPA, Associate Director Peter Guerrero, GAO, and Inspector General John Martin, EPA. The focus of the hearing was EPA's registration and reregistration process based on the Administrations desire to use safer pesticides and reduce overall pesticide use, food safety (due to the recently released report from the National Academy of Science titled "Pesticides in the Diets of Infants and Children"), EPA's current activities to expedite safer pesticide registration and strategy to reduce overall pesticides usage, USDA's involvement in pesticide related activities in conjunction with EPA, and USDA's involvement in the development of biological pesticides and safer pesticides. The Forest Service had previously provided two Informational Memorandum's to the Assistant Secretary's office concerning the Forest Service activities in pesticide-use.

Deputy Secretary Rominger's testimony mentioned the Forest Service twice. First, the Forest Service is actively investigating the development of biological pesticides, such as microbials. Second, the Forest Service is actively pursuing the development of bark beetle pheromones.

No questions concerning Forest Service pesticide activities were asked by members of the Subcommittee. The Forest Service's Informational Memorandum provided to the Assistant Secretary's office will be distributed to the field as a Pesticide Advisory Memorandum by the Washington Office. The Washington Office will also provide copies of the prepared testimony by Deputy Secretary Rominger, USDA, and Assistant Administrator Goldman, EPA, that was presented at the hearing.

Dave Thomas, Forest Pest Management Staff, attended the hearing.

CONTACT: DAVE THOMAS (DC) (202) 205-1600



## **CHEMICAL COMPANY TECHNICAL REPRESENTATIVE CONTACTS REESTABLISHED**

The Washington Office has reestablished contact with either product managers or technical representatives with most all major manufacturers of forestry pesticides. The Washington Office plans to meet periodically with the contacts to share information on new product development, label changes and other important issues pertaining to pesticide-use in forestry. As new and useful information is obtained, the Washington Office will forward it to the field.

CONTACT: DAVE THOMAS (DC) (202) 205-1600

## **USDA AND EPA COORDINATION ON DRAFT FINAL RULE ON ENDANGERED SPECIES ACT PROVISIONS ON PESTICIDES**

Recently the Washington Office met with other USDA agencies and the U.S. Environmental Protection Agency (EPA) to coordinate the provisions and identify agency concerns within the "Draft Final Rule on Endangered Species Act" as they relate to pesticide use. Agencies involved were Forest Service (FS), Soil Conservation Service (SCS), Agricultural Stabilization and Conservation Service (ASCS), Economic Research Service (ERS), Animal and Plant Health Inspection Service (APHIS), Cooperative State Research Service (CSRS), Office of General Counsel (OGC), Extension Service (ES), and Agricultural Research Service (ARS). The meeting was coordinated by Larry Elworth, Special Assistant for Pesticide Policy, for Jim Lyons, Assistant Secretary for Natural Resources and Environment (USDA). EPA expects to have the Final Rule out in early 1994.

CONTACT: DAVE THOMAS (DC) (202) 205-1600



## “THE ROLE OF HERBICIDES IN ECOSYSTEMS MANAGEMENT”

Recently a paper was presented at the 1993 National Silviculture Workshop held in Ashland, North Carolina, titled “The Role of Low Impact Herbicides in Ecosystem Management.” The paper was authored by Charles McMahon and Dr. Jim Miller, of the Southern Experiment Station, and Dave Thomas, Washington Office, FPM. The paper reinforces the role of herbicides as an important component and effective tool in accomplishing management objectives within the context of Ecosystem Management. The paper will be distributed to the field.

CONTACT: CHARLIE MCMAHON (AL)	(205) 826-8700
JIM MILLER (AL)	(205) 826-8700
DAVE THOMAS (DC)	(202) 205-1600

## ITEM OF IRONICAL INTEREST

The Washington Office recently had a Freedom of Information Act request from a law firm wanting information on Forest Service chemical purchases from 1940 to 1965. While researching the available information, it was discovered that the first aerial application of pesticides against forest insects in the United States occurred on August 3, 1921, in Troy, Ohio, utilizing a Curtis JN-6 (Hisso-Jenny) biplane. The pesticide applied was arsenate of lead. The ironical part of this fact is that the Curtis JN-6 aircraft was designed by B. Douglas Thomas, the grandfather of Dave Thomas, Pesticide Specialist in the Washington Office. Most everyone that knows Dave can now appreciate his interest in aerial application programs.

CONTACT: DICK FOWLER (DC)	(202) 205-1600
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## HISTORY OF AERIAL SPRAYING

In a recent book *Application Technology for Crop Protection*, completed and edited by Matthews and Hilslop, Jack Barry reviewed the history of aerial application to forests. In 1911 Alfred Zimmerman, a German forester, was granted a patent by the German Imperial Patent Office for his idea of spraying by aircraft. Chapter 12 of the book *Aerial Application to Forests* references and summarizes important events in the chronology of aerial spraying to forests from 1921-1979.

CONTACT: JACK BARRY (CA)	(916) 551-1715
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## DECONTAMINATION KIT

Precision Laboratories, Inc., now offers a decontamination kit that is designed to comply with recent EPA regulations which expand worker protection standards. According to the regulations, which will be enforced beginning April 15, 1994, employees must provide pesticide handlers with equipment for decontamination. Precision's kit provides these materials in a portable, lightweight, insulated kit, with bright colors for quick identification. For further information:

CONTACT: BOB GORDON

(800) 323-6280 EXT. 29

## WORKER PROTECTION STANDARD REQUIREMENTS

From *Utah Pesticide and Toxic News* (Vol. 11(10), October 1993), Cooperative Extension Service, Utah State University, Logan, UT:

"About 9,000 agriculture industry end-use pesticide labels will have to be revised and approved by EPA by April 21, 1994. Products sold or distributed by registrants must bear the modified labeling by April 21, 1994. The Worker Protection Standard (WPS) applies to labels for the production of agricultural plants on farms or in forest, nurseries or greenhouses. About 3.9 million workers will be covered by the WPS.

Major provisions of the WPS are:

1. Display poster with WPS-specified information.
2. Postings must remain for 30 days after the Re-entry Interval (REI) has expired.
3. Employers must inform workers/handlers where poster is located.
4. Post warning signs at all usual entrances to treated areas.
5. REI's vary from 12 to 72 hours depending on the pesticide's toxicity.
6. An agriculture employer must be informed when a pesticide is to be applied on the agricultural area by a commercial applicator. The commercial applicator must provide the information for posting to the employer.



## WORKER PROTECTION STANDARD REQUIREMENTS (Condt)

7. In case of a suspected pesticide poisoning, the employer must make available prompt transportation.
8. A decontamination site must be within 1/4 mile during the REI plus 30-days.
9. The employer must keep workers, other than trained and protected pesticide handlers, out of an area being treated.
10. Pesticide handlers must be trained in all phases of their job, including proper use of personal protective equipment and safe operation of handling equipment.

Agricultural employers need to start planning for next year, as the WPS will affect budget, personnel and operations. Agricultural employers must comply with the standard when they use any amount of product that contains the new EPA-approved label." (GT, 8/93)

CONTACT: HOWARD DEER (UT) (801) 750-1600

## FINAL NOTICE FOR FEDERAL DISPOSAL OF 2,4,5-T/SILVEX

From *Utah Pesticide and Toxic News* (Vol. 11(10), October 1993), Cooperative Extension Service, Utah State University, Logan, UT:

"This notice announces the closure of EPA's program to accept certain 2,4,5-T/silvex products for disposal. Those individuals still holding eligible pesticide products containing 2,4,5-T or silvex have 30-days to receive approval and complete shipment of their product to Laidlaw (TES), Inc., in La Porte, Texas. After that date, anyone still holding eligible pesticide products containing 2,4,5-T or silvex will need to arrange disposal of their stocks privately. November 22, 1993, is the last date that EPA will accept shipments at Laidlaw (TES), Inc., of 2,4,5-T/silvex products which have been approved for shipment.

For further information contact: Marcia Collins, Disposal and Analysis Section (H7506C), Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460, or call (703) 305-5534." (FR, 9/22/93)

CONTACT: MARCIA COLLINS (DC) (703) 305-5534



## DOW ELANCO NEWSLETTER

An excellent way to keep abreast of new products and methods of use is from company newsletters. In these lean times it's becoming unusual to see a company technical representative so we appreciate newsletters such as DowElanco's *FOCUS*. (Jack Barry)

CONTACT: ROBERT STEWART (503) 451-4323  
30994 Old Santiam Highway,  
Lebanon, OR 97355

### “YELLOW JACKET TRAP EFFICACY”

From *TIB SEP/OCT 93*:

“They’re at our picnics and in our backyard. They’re in our hair and they buzz our faces. Sometimes we’re stung, but most of the time yellow jackets are just plain annoying. Depending on the region, these vespid wasps can keep us from enjoying some of our favorite outdoor events. One tool we may incorporate into our IPM arsenal is the yellow jacket trap. Yellow jacket traps are effective, non-toxic and should be considered as an element in an integrated program. But which trap should we purchase? Are there differences in efficacy? The work of some California entomologists may help you decide which traps are best for you.

George Poinar, Jr., U. C. Berkeley, Henry Heil, a retired biologist, and Thomas Hall, a student at the Waldorf School, have evaluated the performance of three commercially available yellow jacket traps and baits. The following is a summary of their work published in *Pest Management*, JUL 93.

The traps:

Sterling Rescue Yellow Jacket Control Trap, made by Sterling International, Liberty Lake, WA (Sterling Trap). A cylindrical trap that is hung by a string. The wasps enter the bottom of the trap through four 3/8 inch holes. The trap comes with artificial bait that is added to a cotton ball. The cotton ball is placed in a receptacle at the bottom of the trap.

Oak Stump Farm Trap, made by Oak Stump Farm, Eugene, OR (Oak Stump Trap). A wide-mouth half gallon plastic jar. Its sides have four holes 1 inch in diameter. Protein bait is placed in openings of two cylindrical tubes, or gates, that lead directly to the entrance holes. The choice of bait is up to the user, but Oak Stump Farm recommends raw fish or other meat with fruit juice in the bottom of the trap.



## "YELLOW JACKET TRAP EFFICACY" (Condt)

Yellow Jacket and Wasp Trap, Seabright Laboratories, Emeryville, CA (Seabright Trap). A house-shaped trap with two entrance holes 3/8 inch in diameter. It can be placed on a flat surface or hung from a string.

Feature Comparison:

	Sterling	Oak Stump	Seabright
COST	most	mid	least
AESTHETICS	clean	messy	somewhat
RE-BAIT	2-3 weeks	every day	every day
ESCAPES	none	several	one
DEATH	slow	drowning	slow

Performance trials were run in Sebastopol, CA. Fish-flavored cat food was used as a protein attractant in the Seabright and Oak Stump Farm traps. Apple juice was added to the Oak Stump Trap as recommended. Bait was changed every day. The synthetic bait was used in the Sterling trap. Traps were run for 9 days, and the traps were rotated between locations every 3 days.

	Sterling	Oak Stump	Seabright
TOTAL	38.0	152.0	171.0
DAILY AVG.	4.2	16.9	19.0

To analyze the attraction of different baits to yellow jackets, the Seabright trap was used exclusively. The baits were: (1) Oscay Myer Braunschweiger (liverwurst), (2) Friskies Tuna Cat Food (moist), and (3) Raw fryer chicken skin and fat. Tests were conducted in Paradise, CA. Traps were re-baited every other day and rotated every day.

	Braunschweiger	Cat Food	Chicken skin/fat
TOTAL	393.0	146.0	267.0
DAILY AVG.	56.1	20.9	38.1

Considering efficacy and cost, the Seabright trap is the most effective and least expensive. Next would be the Oak Stump trap followed by the Sterling. However, the researchers note that other trap features, such as the amount of time spent cleaning the traps and the frequency of re-baiting, should also be considered when purchasing traps. For more detailed information, see - Pest Management, JUL 93, 12: 21-23."

CONTACT: TOM HOFACKER (DC)

(202) 205-1600



## CALL FOR ARTICLES

Please forward any articles, meeting announcements, publications and reports, or other items of interest that you would like included in the next issue of "Short Subjects and Timely Tips" to me by the 10th of next month. They should be in the following format: Brief title and a summary that doesn't exceed one page in length. Please include the name, State, and telephone number of the individual who can be contacted for further information.

CONTACT: PAT SKYLER (CA) (916)551-1715  
FAX (916)757-8383  
DG: P.SKYLER:R05H

## PUBLICATIONS AND REPORTS

Barry, J. W., M. E. Teske, and H. E. Thistle. 1993. Computing total accountancy of aerially released material. Presented as a poster at *Society of environmental toxicology and chemistry 14th annual meeting - Ecological risk assessment: Lessons learned?* Houston, TX. (Paper available from Barry)

Quackenbush, T. R. and M. E. Teske. 1993. Analysis of environmental risk potential from commercial aircraft engine exhaust products. Presented as a poster at *Society of environmental toxicology and chemistry 14th annual meeting - Ecological risk assessment: Lessons learned?* Houston, TX. (Paper available from Teske)

Rafferty, J. E. 1993. Literature survey of drop penetration through forest canopies: An addendum to volume XVII meteorology source book. DPG Report No. DPG/JCPD-93/010. U.S. Army Dugway Proving Ground, Joint Contact Point Directorate, Dugway, UT.

Reardon, R., L. Venables, and A. Roberts. 1993. The Maryland integrated pest management gypsy moth project, 1983-1987. NA-TP-07-93. USDA Forest Service, Northeastern Area, Morgantown, WV.

(Please send your references for posting in "Short Subjects and Timely Tips.")

CONTACT: PAT SKYLER (CA) (916) 551-1715

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The Washington Office, Forest Pest Management, Pesticide-Use Management and Coordination Group writes and distributes this informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Pat Skyler, Editor, USDA Forest Service, 2121C Second Street, Davis, CA 95616 or by DG to P.Skyler:R05H. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.



SHORT SUBJECTS  
AND TIMELY TIPS  
FOR PESTICIDE USERS

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RISK ASSESSMENT CONTRACT

The contract with Labat Anderson Inc., under which we have generated risk assessments and other documents for the past several years, has expired. Termination date of that contract was September 30. Paul Mistretta (Region 8) is working with Jesus Cota (WO) and Contracting in the WO to develop a solicitation for a new contract to fill the gap. They have contacted all of the regional pesticide coordinators with questions concerning needs for background statement and risk assessment preparation, and with philosophical questions concerning method of presentation and the utility of "ecological risk assessment" within their regional programs. The statement of work is taking shape but there is still time for anyone who would like to input information relevant to this NEPA documentation process as it is or as they feel it should be.

CONTACT: PAUL MISTRETTA (GA) (404) 347-2961



## RISK ASSESSMENT FOR TREE-MARKING PAINT

Labat-Anderson, Inc., was contracted late in fiscal year 1993 to develop a human health risk assessment to determine the potential risks of using paint to mark trees. The task was requested by the Safety and Health Branch of the Personnel Management staff in the Washington office and is a part of a number of steps being taken to address the concerns expressed by some employees of the Forest Service. Questions have been raised by employees who work or have worked marking timber regarding the possible effects of using tree-marking paint on pregnancy and/or the health of children born to users of the paint. In addition to the Risk Assessment, the Safety and Health Branch has requested that NIOSH conduct a survey of Forest Service employees to identify any additional health related cases and to determine whether these cases are statistically significant. The risk assessment being prepared by Labat-Anderson, Inc., should be completed in about two months.

**CONTACT: JESUS COTA (DC) (202) 205-1600**

## NEW LABEL REQUIREMENTS BY EPA

Two Pesticide Registration Notices, PRN 93-3 and PRN 93-7, require label changes for pesticides. The first notice requires a change in the statement that prohibits the direct application to water to extend protection to aquatic life and clarify the misunderstandings about the term "wetlands." The second notice has to do with label changes intended to protect agricultural workers. Both of these notices may affect the use of pesticides in forestry. Of particular concern is the impact on the use of microbials such as Gypchek, TM Biocontrol-1, and *Bacillus thuringiensis* based products. The notices do exempt certain uses under specific conditions. For example, aerially applied forestry pesticides are exempt by PRN 93-3 and pesticides used in area-wide government sponsored pest control programs are exempt in PRN 93-7. However, there are enough exceptions and criteria in both of the notices to be confusing. So, the Forest Pest Management staff has requested clarification from U.S. Environmental Protection Agency on the requirements for Gypchek, TM Biocontrol-1, and *Bacillus thuringiensis* products.

**CONTACT: JESUS COTA (DC) (202) 205-1600**  
**CONTACT: DAVE THOMAS (DC) (202) 205-1600**



## **PNW REGION PUBLISHES RESULTS OF VEGETATION MANAGEMENT LITERATURE SEARCH**

In March of this year, Region 6 FPM distributed the results of its first computerized search of scientific literature and anecdotal accounts relating to managing competing and unwanted vegetation. The database contains 1559 citations, many with abstracts on the environmental and human health effects of manual, mechanical, biological, chemical, and thermal treatments. The search covered all items entered into commercial databases between September 1, 1990, and December 31, 1991.

The database is intended to keep the Region and Cooperators abreast of the latest research on the effects of vegetation management, in accordance with our obligations under the Mediated Agreement. It is designed to be used in the vegetation analysis and planning process. (For those new to the agency, in 1989 the "Mediated Agreement" ended a longstanding Federal lawsuit against the use of herbicides in Region 6.) Herbicides included within the scope of the search were glyphosate, hexazinone, triclopyr, picloram, asulam, atrazine, bromacil, simazine, dicamba, 2,4-D, 2,4-*DP*, and tebuthiuron.

The search strategy and initial database were produced under contract with Information Ventures, Inc. Region 6 has entered into an inter-regional agreement with INFO-South of Region 8 to produce annual updates of the database for the agency and the Bureau of Land Management. The update for Calendar Year 1992 should be available by next spring.

Each Regional Forester and the Director of the NE Area were sent, under file code 2150, a set of floppy disks which included a licensed retrieval system and directions for loading the system. Region 6 would be very interested to know how the database was used by other regions, and of what value it proved to be. Questions about the database and suggestions for improvement would be welcomed.

**CONTACT: JERRY GABAY (OR) (503) 326-6220**

### **1994 WEED CONTROL MANUAL AVAILABLE**

The 1994 Weed Control Manual published by Meister is now available. The reference lists weed control by crop for more than 75 crops and is completely indexed by herbicide and by common and scientific name of weed controlled. The manual has been updated to September 1. For ordering information call:

**CONTACT: MEISTER (OH) 1(800) 572-7740  
CONTACT: MEISTER (OH) (216) 942-2000**



## WHAT DO *BACILLUS THURINGIENSIS* AND ANTS HAVE IN COMMON

From *Agricultural Engineering* (September 1993):

“SC Johnson Wax, Mycogen Corp., and Mycogen’s Parasitix subsidiary have announced the discovery of naturally occurring protein toxins with pesticidal activity against ants. These discoveries, involving several strains of *Bacillus thuringiensis* (Bt), are the first publicly disclosed results of a research and development collaboration that began in 1990. It is anticipated that the joint program could lead to the development and commercialization of biocontrol products to control ants and other household pests.”

For additional information:

CONTACT: JIM MAY (CA) (414) 631-2436

## AGRICHEMICAL LEACHING

From *Agricultural Engineering* (September 1993):

“Placing fertilizers and other agrichemicals on the downwind side of crop rows in ridge tillage farming systems would expose them to less rainfall, an ARS study shows. This would lessen the chance of the chemicals being leached to ground water. Ridge-till farmers plant crops on built-up seedbeds or ridges, with valleys between ridges. A study of corn and soybeans during the 1992 growing season, showed that the least rain fell on the ridge shoulder on the leeward side, making it the driest part of the ridge. This season, the effect of wind direction on the actual movement of fertilizer and herbicides will be studied.”

For additional information:

CONTACT: ROBERT H. DOWDY (MN) (612) 625-7058



## REVITALIZING WESTERN RANGELAND

As has been noted widely in the popular and technical literature, many of our land management activities have significantly affected the character and quality of forest and range systems. In many cases we have disrupted or altered natural processes through fire suppression, timber harvest or grazing activities, and introduction of exotic species, etc. Ecosystem restoration will require a better understanding of natural processes as well as thoughtful intervention. Restoration techniques may include the reintroduction of fire as well as the judicious use of harvesting, grazing, and chemical application.

The University of Wyoming Extension Service recently produced a video entitled "Revitalizing Our Western Rangeland - A New Look at Sagebrush Management." This video explores the historic role of fire in maintaining vegetative diversity in rangeland. It examines the changes in vegetative composition with fire exclusion and cattle grazing and discusses treatment of sage-dominated range. The positive effects on many wildlife species are noted. For more information on this program and video:

CONTACT: TOM WHITSON (WY) (307) 766-3113

CONTACT: RANDY ANDERSON (WY)  
(VIDEO ORDER) (307) 766-6345

## FLUSH AND RINSE SPRAYERS

From *The Agricultural Engineering 50 for 1993* (AE 50/13):

"Hardi's 'Flush & Rinse' System<sup>TM</sup> assists the sprayer operator to flush the spray lines should the spray task be interrupted and rinse the main tank between loads or spray operations. The system consists of a front-mounted tank (53 or 80 gal.) to carry the cleaning solution and a set of two 360-degree rotating rinse nozzles (or tank washing nozzles) inside the sprayer. Advantages include: reduction in time and labor needed to rinse the sprayer; reduction in amount of contaminated rinse water with greatly reduced disposal problems; reduction in crop damage and plugged nozzles; and rinse water can be sprayed over the crop rather than disposed of on a rinsing site."

CONTACT: HARDI, INC., (IA) (319) 386-1730



## IN-FURROW DELIVERY OF INSECTICIDES

From *The Agricultural Engineering* 50 for 1993 (AE 50/13):

“The **Custom Delivery System** from FMC’s Agricultural Chemical Group was developed for applying Furadan® 4F insecticide/nematicide in-furrow at planting time. A 15-gallon U-Turn® reusable drum sets in a specifically designed water tank that is mounted to a planter. A dry brake system, containing an air-tight seal that is intended to minimize exposure to farm workers, connects the Furadan 4F drum to the pumping system. The pump meters and sends Furadan 4F to the manifold and into individual microtubes, which apply the Furadan in-furrow as the seed is going in. The entire pumping system is governed by a control box mounted near the operator of the tractor.”

**CONTACT: FMC CORPORATION AGRICULTURAL CHEMICAL GROUP (PA) (215) 299-6087**

## NEW TECHNOLOGY IN PEST CONTROL

From *Agricultural Engineering* (September 1993):

“**Mycogen Corp.** and **Ciba Seeds** entered a cross-license agreement and research collaboration to develop corn hybrids that resist insects.”

**CONTACT: MICHAEL SUND (CA) (619) 453-8030**

and

“**Ecogen Inc.** received registration for Nomate® TPW Spiral formulation. NoMate is a pheromone-based biorational used for the control of tomato pinworm.”

**CONTACT: DALE FLURI 1(800) 220-2135**



## CANCER RISKS

From *Utah Pesticide and Toxic News* (Vol. 11(8), August 1993). Quoting from USDA, Cooperative Extension Service (Logan, UT):

“Media reporting overstates the cancer risk from environmental pollution, food additives, pesticides, and household chemicals according to cancer specialists surveyed in a new study. The Center for Media and Public Affairs, a Washington-based non-profit research group, surveyed 400 members of the American Association for Cancer Research and found they ranked the top cancer threats as tobacco, sunlight, and diet, in contrast to the media’s emphasis during the past decade on synthetic chemicals, food additives, pollution, radiation, and pesticides. Most of the scientists rate the media as doing only a fair to poor job of informing the public about cancer.”

CONTACT: HOWARD DEER (UT) (801) 750-1600

## PUBLICATIONS AND REPORTS

Barry, J. W. 1993. Aerial application to forests (Chapter 12). In *Application Technology for Crop Protection*, eds. G. A. Matthews and E. C. Hislop, 241-273. Wallingford: CAB International.

Barry, J. W. 1993. *Sixth report* - National steering committee for management of western defoliators. FPM 93-14. USDA Forest Service, Forest Pest Management, Davis, California.

Barry, J. W. 1993. *Sixth report* - National steering committee for management of gypsy moth and eastern defoliators. FPM 93-15. USDA Forest Service, Forest Pest Management, Davis, California.

Skyler, P. J. and J. W. Barry. 1993. Bibliography of pesticide application technology. FPM 91-9 (Revised). USDA Forest Service, Forest Pest Management, Davis, California.

Skyler, P. J. and J. W. Barry. 1993. National pesticide management course alumni responses to questionnaire - A post evaluation of the 1986, 1989, and 1991 courses. FPM 94-1. USDA Forest Service, Forest Pest Management, Davis, California.



Teske, M. E. 1993. USDA Forest Service spread factor technology database. Presented at *ASTM 14th symposium on pesticide formulations and application systems*. Fort Worth, Texas, 12-13 October.

(Please send your references for posting in "Timely-Tips."

**CONTACT: PAT SKYLER (CA) (916) 551-1715**

#### **FOOTNOTE**

The Washington Office, Forest Pest Management, Pesticide-Use Management and Coordination Group writes and distributes this informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Pat Skyler, Editor, USDA Forest Service, 2121C Second Street, Davis, California 95616 or by DG to P.Skyler:R05H. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.



SHORT SUBJECTS  
AND TIMELY TIPS  
FOR PESTICIDE USERS

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NATIONAL PESTICIDE TRAINING

Mark your calendar for March 14-31, 1994. The fourth *National Pesticide-Use Management Training Course* will be held at the National Advanced Resource Technology Center, Marana, AZ. A call letter is being sent by the Chief to Regions, Stations, and Area. The goal of the course is to provide a forum for pesticide-use management information and technology transfer to USDA Forest Service scientists and foresters, and State and Federal cooperators, and international partners. Upon successful completion of the course, the attendees will be updated on management and practices of pesticide uses in forestry.

The course is designed to prepare forest level professional silviculturists, range conservationists, entomologists, pesticide coordinators, and managers whose current or future assignment involves or will involve coordinating and managing pesticide-use training and pesticide-use projects. The scope of the course will include forest and range uses but not pesticide uses in nurseries and greenhouses.

The 1994 course will be presented in four modules - Insecticide, ICS for Managing Pesticide Projects, Common Subjects, and Herbicide. Students may elect one or all modules. In selecting the module approach the steering committee noted the traditional high standards of this national course could be maintained while controlling costs.

CONTACT: ROGER CORNER (AZ)  
JACK BARRY (CA)

(602) 670-6414  
(916) 551-1715



## TRYCLOPYR FOREST WORKER EXPOSURE STUDY

A 1989 study of forest worker exposures to tryclopyr (Garlon 4) during routine "streamline" applications typical of silvicultural site preparation and release has been reported by Paul J. Middendorf of Georgia Institute of Technology, and a summary of the report has been prepared by Jim Brown of R-8 FPM. Using "standard" protective clothing, the lowest Margin Of Safety (MOS) predicted by risk assessment modeling for typical worker exposure using this product and application method was 290; geometric mean dose rates from the study show a MOS of 262. Two of the 16 workers in the study failed to meet the minimum acceptable MOS of 100; in both cases, failure to wear gloves contributed significantly to dermal exposure. Use of gloves, proper equipment performance, level of training, and level of worker experience were all shown to influence herbicide exposure. The study made the following recommendations to minimize worker exposure:

1. Adequate training for all workers and crew leaders.
2. Regular inspection and maintenance of spray equipment.
3. Use of appropriate Personal Protective Equipment (PPE) including gloves.
4. Proper personal hygiene including immediate decontamination following significant exposures.

For more information and details on "standard" protective clothing -

**CONTACT: JIM BROWN (GA)**

**(404) 347-2961**

### EPA DRAFT REPORT

The EPA has published a "Draft Report: Principles of Neurotoxicity Risk Assessment" - 58 FR 41556, August 4, and has solicited comments on the document. Comments are due by November 2. Reprints (Document #EPA/600/Z-93/001) are available from: EPA Office of Research and Development Publications Center; CERI-FRN, EPA; 26 West Martin Luther King Drive, Cincinnati, OH 45268 - FAX orders (513) 569-7566.

Submit comments to Hugh Tilson; Neurotoxicity Risk Assessment; Neurotoxicity Division (MD-74B); HERL, EPA; Research Triangle Park, NC 27711 or by FAX (919) 560-7566.

**CONTACT: EPA (OH)**

**(513) 569-7562**

### PESTICIDE BACKGROUND STATEMENTS, HERBICIDES

The Washington Office has about 250 copies of "Pesticide Background Statements, Volume 1, Herbicides" available for anyone who needs copies. They also have copies of the "Supplement" that came out after Volume 1.

**CONTACT: DICK FOWLER (DC)**

**(202) 205-1600**



## URBAN FOREST PEST MANAGEMENT

NOVO Nordisk Entotech, Inc. in partnership with the City of Davis (California), has been evaluating *Bacillus thuringiensis* (Bt) subspecies *tenebrionis* to control elm leaf beetle. They are using a backpack mistblower equipped with a Micronair nozzle. About 50 trees were treated in 1993. A parallel Entotech cooperative project has been happening on the University of California campus using Novodor (Bt) applied by a conventional hydraulic sprayer. Results are encouraging and a report is in preparation.

<b>CONTACTS:</b>	<b>JIM CONLEY (CA)</b>	<b>(916) 757-4700</b>
	<b>PATTY GOUVEIA (CA)</b>	<b>(916) 757-5626</b>
	<b>STEVE DREISTADT (CA)</b>	<b>(916) 752-8876</b>
	<b>DON DAHLSTEN (CA)</b>	<b>(510) 642-7191</b>

## VOLUNTEER SERVICES AVAILABLE

A Forest Service employee of Region 8, Max Williamson gained quite a reputation for developing hand application methods for herbicides, particularly spot applications. He emphasizes selective vegetation management techniques for silviculture and right-of-way treatments. His services are available to Federal agencies on a volunteer basis.

For further information -

<b>CONTACT:</b>	<b>MAX WILLIAMSON (GA)</b>	<b>(404) 668-1571</b>
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## “CHEMICAL BRUSH CONTROL GAINS FAVOR”

The *California-Arizona Farm Press* (Vol. 15, No. 10) reports ranchers in the Solvang, CA area are reevaluating the economics of mechanical versus chemical control of competing weeds:

1. “Ranchers who resorted to the difficult technique of crushing back country brush with balls and chains say the new alternative of chemical control they have tried in trials convinced them to use the method commercially.”
2. “When you consider the manpower and equipment time saved, it becomes a very good alternative. Lausten estimated it cost him roughly \$200-\$300 an acre to mechanically handle the brush, while the chemical alternative is estimated at about \$40.”
3. “Another rancher who participated in the tests said he was attracted to the option since it allowed him to control brush on steep slopes without burning, which led to erosion problems in some areas.”
4. “It appears we now have another tool to use in control of brush in certain situations, said the Hayes Ranch cooperator (Fred Hayes). We burn where we can, but need other options where we need them. It is helpful to have this choice.”



5. "One of Hayes favorite advantages to using chemical control is that it allows him to handle brush on smaller areas of the ranch where burning would be difficult. When you set up to burn, it can be expensive if you just need to treat a small area, he said. Chemicals provide us a tool to use in just such situations."

6. "Hayes, who will use the process on about 70 acres on his own this year, said that treatments may be needed again in about seven years. My feeling is that with about three such treatments, we shouldn't need to come back with another application for about 15-years, he noted."

7. "Wildlife won't even move into a lot of the natural growth area on our ranch, he said. They prefer the land that is easier to use. My observations are that even the snakes and bears won't move into those areas where the brush is heaviest."

8. "Brush also uses a lot of water, causing underground moisture tables to dwindle without any real return for the rancher. Managing brush properly can enhance watershed as well. Chemical control as an alternative to burning also can reduce erosion, since some species remain to arrest down-slope runoff."

**CONTACT: T. J. BURNHAM (CA)**  
**FARM PRESS EDITORIAL STAFF**  
**(SACRAMENTO)** **(916) 442-4624**

#### **WORKER PROTECTION STANDARD**

Quoting from Forest Laws, *Farm Press* editorial staff:

1. "The first - the Worker Protection Standard for agricultural pesticides - actually became enforceable April 21. That was the first date chemical manufacturers could begin selling pesticides with the new WPS labeling."

2. "Companies have until April 21, 1994, to convert all their product labels, so it may be a while before those begin showing up in the marketplace. (Be alert, however, because once the WPS labeling appears, you must follow all the guidelines)."

3. "The second - recordkeeping requirements for restricted use pesticides - was scheduled to take effect May 10."

4. "Congress passed legislation authorizing a worker protection standard in 1984, but EPA did not publish the final rule for the WPS until last August 21. As might be expected from that amount of lead time, the regulations are far reaching."

5. "These new labels will state specific safety information for that particular chemical, including personal protective equipment requirements, entry restrictions and worker notification."



6. "Personal protective equipment includes chemical resistant gloves, footwear, headgear and suits; a chemical cartridge respirator, coveralls, and goggles. Leather gloves and boots must not be worn, since leather soaks up chemicals and concentrates the chemical on the skin."

7. "Coveralls may be required by some labels, while a chemical resistant suit may be required for more toxic chemicals, the specialists say. The whole idea is that when properly used, personal protective equipment will greatly reduce the wearer's chance of being injured by a chemical."

8. "Note: The specialists say that respirators must be NIOSH/MSHA approved because others may not be of top quality."

**CONTACT: FOREST LAWS  
FARM PRESS EDITORIAL STAFF  
(SACRAMENTO)** (916) 442-4624

#### **BIG GAME REPELLANT - RESUMPTION OF USE**

The Pacific Northwest Region has resumed the use of Big Game Repellant (BGR) (Deer-Away, IntAgra Inc.) after considering the results of an EPA review of the inert ingredient used as a "sticker" in the product. Region 6 and the Bureau of Land Management, Eugene District Office, had suspended the use and application of BGR in animal damage prevention projects because of a health and safety concern with ethyl acrylate, a chemical precursor for the sticker. EPA concluded ethyl acrylate, found in concentrations below 0.1 percent, should not be a significant concern and human exposure should be negligible based on the use pattern and application rate of the product. The Washington Office has provided detail information on the EPA review and on this product in Pesticide-Use Advisory Memorandum No. 461.

**CONTACT: JESUS COTA (DC)** (202) 205-1600

#### **PUBLICATIONS AND REPORTS**

Anonymous. 1993. 1993 spruce budworm and hemlock looper aerial treatment program report. Forest Protection Limited, Fredericton, N.B.

Barry, J. W. 1993. *Fourth report* - National spray model steering committee. FPM 93-16. USDA Forest Service, Forest Pest Management, Davis, CA.

Barry, J. W. 1993. *Fifth report* - National steering committee for management of seed, cone, and regeneration insects. FPM 93-13. USDA Forest Service, Forest Pest Management, Davis, CA.

Barry, J. W., P. J. Skyler, M. E. Teske, J. A. Rafferty, and B. S. Grim. 1993. Predicting and measuring drift of *Bacillus thuringiensis* sprays. *Environ. toxicol. and Chem.* Vol. 12, No. 11(XXX-XXX).



Glover, G. R. and S. M. Zedaker. 1993. An international perspective on environmental concerns and regulations affecting forest herbicide use. AUSHC Information Note 93-2. Auburn University, Alabama.

MacNichol, A. Z. and M. E. Teske. 1993. FSCBG model comparisons with the 1988 Davis spray characterization trials. FPM 93-12 (CDI Technical Note No. 93-08). Prepared under Contract No. 53-0343-1-00153 by Continuum Dynamics, Inc., for USDA Forest Service, Forest Pest Management, Davis, CA.

Rafferty, J. E. 1993. Literature survey of drop penetration through forest canopies: An addendum to Volume XVII meteorology source book. DPG Report No. DPG/JCPD-93/010. U.S. Army Dugway Proving Ground, Dugway, UT.

Teske, M. E. and T. Curbishley. 1993. Forest Service aerial spray computer model - FSCBG 4.2 user manual extension. FPM 93-17 (CDI Technical Note 93-05). Prepared by Continuum Dynamics, Inc. under Contract No. 53-04H1-9-0510 for USDA Forest Service, Forest Pest Management, Davis, CA.

Teske, M. E., A. J. Bilanin, and J. W. Barry. 1993. Decay of aircraft vortices near the ground. *AIAA Journal*, Vol. 31(8):1531-1533.

**CONTACT: PAT SKYLER (CA)**

**(916) 551-1715**

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The Washington Office, Forest Pest Management, Pesticide-Use Management and Coordination Group writes and distributes this informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Pat Skyler, Editor, USDA Forest Service, 2121C Second Street, Davis, CA 95616, or by DG to P.Skyler:R05H, or by Phone: (916) 758-4600. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.

FPM:P.Skyler/J.Cota:lt:09/21/93:205-1600



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**ZDENKA HORAKOVA RETIRES**

Zdenka Horakova, a Pesticide Specialist in the Washington Office, retired on August 3 after 23 years of Federal service. She started her career with the National Heart and Lung Institute in 1970. In 1978, she moved to the Food Safety and Quality Service, and transferred to the Forest Service in 1987. Zdenka provided toxicology support for the Pesticide-Use Management and Coordination Group. Zdenka also managed the Forest Service National Agricultural Pesticide Impact Assessment Program (NAPIAP) and assisted in risk assessment development and pesticide toxicological assessments. Her assistance in the Washington Office will be greatly missed. A small farewell party was held in the Washington Office. Zdenka stated she will continue her involvement in the NAPIAP program as a volunteer. Zdenka and her husband plan to remain in the Washington, DC, area and plan on traveling extensively.

CONTACT: JESUS COTA (DC) (202) 205-1600  
DAVE THOMAS (DC) (202) 205-1600



## STUDY TO DETERMINE EFFECTS OF SLOPE ASPECT AND MICROCLIMATE ON GYPSY MOTH LARVAE SURVIVAL

A study is being conducted in the Wasatch Front northeast of Salt Lake City, Utah, this August and September to determine the effects of slope aspect and microclimate on gypsy moth larvae survival. The study is being conducted by Mark Quilter (State of Utah, Department of Agriculture) in cooperation with John Anhold (USDA-FS, Region 4). Caged larvae are being put out on a north face, a south face, and a canyon bottom. Each aspect station has three cages at different canopy levels. In conjunction with the cages, humidity and temperature are being monitored and stored continuously at each canopy level. Wind speed, direction, and net radiation are also being monitored at each site. Meteorological data collection systems were configured and deployed by USDA-FS personnel from Missoula Technology and Development Center (MTDC). Anyone interested in the study or aware of other relevant work are invited to contact Mark Quilter, John Anhold, or Harold Thistle (MTDC).

CONTACT: MARK QUILTER (UT)	(801) 538-7190
JOHN ANHOLD (UT)	(801) 476-9732
HAROLD THISTLE (MT)	(406) 329-3981

## RISK ASSESSMENTS/BACKGROUND STATEMENTS LOCATIONS LIST

Paul Mistretta (FPM, Region 8) has compiled a list of locations of risk assessments and background documents of pesticides which he has been able to find and which apply to FS programs. If you would like a copy of this list or have additions to add to the list please contact Paul.

CONTACT: PAUL MISTRETTA (GA)	(404) 347-2961
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## NEW TSCA CRITERIA FOR "SUBSTANTIAL" AND "SIGNIFICANT" "HUMAN EXPOSURE RELEASED

From "Environmental Risk Watch - Current Developments in Environmental and Human Health Risk Assessment" (Volume 2, Number 13, June 22, 1993).

EPA has released its Human Exposure Criteria Guidelines (58 Federal Register 28736) for determining which chemicals must undergo testing under the Toxic Substances Control Act (TSCA). Under TSCA, EPA has the authority to require chemical testing to develop data for risk assessment. According to TSCA Section 4(a)(1)(B), in cases where there are little or no hazard data available about a chemical, EPA can still request testing if the chemical will be produced in substantial quantities and there may be significant or substantial human exposure. The guidelines come as a result of a ruling by the Fifth Circuit Court (Chemical Manufacturers Association v. EPA, 899 F.2d 344, [5th Cir. 1990]) that instructed the agency to articulate the criteria by which it finds the human exposure "substantial" or "significant."



EPA set numerical thresholds for a finding of "substantial exposure" and proposed that "significant exposure" be defined by an exposure that does not meet the numerical threshold but is sufficiently direct, large, or prolonged. The agency summarized the criteria in the following table:

**TSCA Section 4(A)(1)(B)(I) Human Exposure Criteria Guidelines**

<i>Category</i>	<i>Substantial</i>	<i>Substantial</i>
General Population	100,000 people	<100,000 people exposed more directly or on a routine or episodic basis
Consumers	10,000 people	<10,000 people exposed more directly or on a routine or episodic basis
Workers	1,000 workers	<1,000 workers exposed more directly or on a routine or episodic basic

The document also contains EPA's definitions of "substantial production" and "substantial release" of a chemical and responses to public comments on the guidelines. For more information, contact Susan B. Hazen at EPA's Office of Pollution Prevention and Toxics.

**CONTACT: SUSAN B. HAZEN (DC) (202) 554-1404**

**"MORE POTENT PESTICIDE SOUGHT"**

That's the sub-headline in a recent Sacramento Bee article by Chris Bowman. Seems the elm leaf beetle is defoliating Sacramento's European and Siberian elms - happens every year. Bidrin (dicrotrophos) was used until the State of California found out. Now the city is using Metasystox-R, which according to the city's superintendent of tree services, is only effective for 2 weeks. Where are the classic biocontrol folks now, we really need them? The City of Davis, California, reportedly solved one of its elm beetle problems by falling a historic elm with a chainsaw - seems building occupants were tired of sliding on larvae covered walks. Protection of historic and aesthetic urban trees provides opportunities for the Forest Service and its cooperators.

**CONTACT: JACK BARRY (CA) (916) 551-1715**

**TECHNICAL SESSION ON AGRICULTURAL AVIATION TO BE HELD**

Joel Walker advises a technical session sponsored jointly by the American Society of Agricultural Engineers (ASAE) and the National Agricultural Aviation Association (NAAA) will be held during the 1993 NAAA Annual Meeting in Reno, Nevada, December 6-9. The major objective of the session will be to present results of recent research and development efforts that can have an early impact on the agricultural aviation industry. For papers or programs contact Joel.

**CONTACT: JOEL WALKER (AR) (501) 575-2351**



## RECORDS MAINTENANCE FOR APPLICATIONS OF FEDERAL RESTRICTED USE PESTICIDE (RUP)

The Food, Agriculture, Conservation, and Trade Act of 1990 requires certified applicators, both commercial and private, to maintain records for every application of a Federal Restricted Use Pesticide (RUP). The final rule was published in the Federal Register in April 1993; effective date of May 10. Mandated records under the law are: (1) Product name and registration number; (2) total amount applied; (3) location, size of area, and crop type; (4) date of application; (5) name and certification number of applicator; and (6) special "spot application" records. These records must be maintained, under the law, for 2 years. If a project is contracted, the applicator must provide a copy of the application record to the Forest Service within 30 days of applying the RUP. This requirement simply puts the weight of law behind our already required form FS 2100-5. It adds only a single data point to what we already require (the applicator's certification number). For the Forest Service form and data requirements see FSH 2109.11, Ch. 95 or FSM 2158.5-2 in Title 2100 Amend. 14 (8/81).

For further information (about the law) contact USDA Recordkeeping Branch, 8700 Centreville Road, Suite 200, Manassas, Virginia 22110.

CONTACT: DAVE THOMAS (DC) (202) 205-1600  
USDA RECORDKEEPING BRANCH (VA) (703) 330-7826

## EPA'S PESTICIDE WORKER PROTECTION STANDARDS

As most of you are aware the EPA's pesticide worker protection standards are being phased in this year and next. These regulations will have a significant effect on some Forest Service operations. Pesticide applications at nurseries, seed orchards, and silviculture sites will be particularly affected. Training workers to comply with these standards will also be a challenge. Ed Monnig, FPM Region 1, would like to put together a list of training materials available on this subject for later publication in Timely Tips. Please forward to him any information you might have on training aids such as videos, publications, training courses (E.Monnig:R01A).

CONTACT: ED MONNIG (MT) (406) 329-3134



(Editors Note): EPA has just completed a printed set of training literature, a slide/tape program, and two video tapes on worker protection training requirements. Dave Thomas, WO-FPM, will obtain copies and distribute the materials to the Pesticide Coordinators as soon as they are available (D.Thomas:W01C).

### **FIELD TESTING OF TREE-MOUNTED SPRAY SYSTEM**

Nancy Rappaport (PSW Albany), Jack Stein (PSW Albany), Tom Catchpole (Sierra NF), Diane Herzberg (MTDC, Missoula), and Jack Barry (WO/FPM/Davis) are field testing a tree-mounted spray system for the protection of tall, remotely- located conifers from attack by cone and seed insects. The tests are focusing on disease-resistant sugar pines on the Pineridge RD of the Sierra NF California. We have mounted single nozzles at the tops of three of these trees, with PVC pipe running down the trunks. Spraying of Asana is conducted by driving a truck-mounted tank up to each tree, connecting a pump to the PVC pipe with a quick-coupling device, and pumping spray to the treetops for between 10 and 20 minutes, depending on tree height. Trees can be sprayed virtually to run-off with this system, and repeated sprays are easily accomplished. The system costs only about \$25/tree for materials, and the system can theoretically be left in place indefinitely. The nozzles are of the type that are used in lawns for 25 years or more. Sprays should be made when up-canyon winds are minimal. Sampling the drop spectrum using Kromekote cards at three crown levels and three ground radii has just been completed. Visual inspection indicates that crown coverage is very good to at least mid-crown level, and drift at ground level is minimal. Stay tuned....

**CONTACT: NANCY RAPPAPORT (CA) (510) 559-6470**

### **DUPONT LABEL AND MSDS FAX SERVICE AVAILABLE**

DuPont has established a fax-on-demand label service. Both labels and MSDS for their products can be faxed directly to you by calling the 800 number listed below.

**CONTACT: DUPONT VEGETATION MANAGEMENT 1-800-685-9542**

### **TIMELY TIPS - PAST AND PRESENT**

Thanks to Ed Monnig (FPM Region 1) we have a complete set of "Timely Tips. " Dennis Hamel and Max Ollie (FPM Washington Office) initiated "Timely Tips " in 1987. Each volume will be bound, listed in the FS-INFO System, and retained in the WO-FPM Davis library.

**CONTACT: PAT SKYLER (CA) (916) 551-1715**



## SCS/ARS/CES PESTICIDE PROPERTIES DATABASE FOR ENVIRONMENTAL DECISION-MAKING

To assist the USDA Soil Conservation Service (SCS) in implementing water quality for conservation planning a screening procedure has been developed to evaluate the relative loss of pesticides from soils. This screening procedure is a first-tier evaluation of the impact of using a particular pesticide on a specified soil. A Pesticide Properties Database (current version 2.1) has been developed for SCS by the Agriculture Research Service (ARS) and the Cooperative Extension Service (CES) to provide information for ranking pesticides in the screening process. The database contains parameters useful in evaluating potential loss of a pesticide due to leaching and to surface runoff. For additional information.

**CONTACT: LOCAL SCS STATE AGRONOMIST**

### PESTICIDES AND CHILDREN

Recently, the National Academy of Sciences (NAS) released a 386 page study titled "Pesticides in the Diets of Infants and Children" prepared by the Committee on Pesticides in the Diets of Infants and Children (see Publications and Reports). The specific focus is on pesticides utilized on food crops and their relationship to risks to infants and children. This study may increase public controversy and could ultimately affect the Forest Service's use of pesticides. FPM in the Washington Office has drafted a briefing paper, which is being cleared by the Secretary's Office. As soon as it is cleared, a copy will be sent to all Pesticide Coordinators along with a copy of the Executive Summary of the study and a copy of EPA's news release, which has a fairly lengthy "questions and answers" section. FPM has a copy of the study and has ordered 5 additional copies.

**CONTACT: DAVE THOMAS (DC) (202) 205-1600**

### NEW TO WASHINGTON OFFICE

For those of you that have not already heard, Dave Thomas is new to the Forest Pest Management Staff in the Washington Office. Dave is a Pesticide Specialist working in the areas of herbicides and insecticides and is working closely with EPA on the registration of several pesticides. Dave comes to the Washington Office from Region 5, where he was the Forest Silviculturist on the Eldorado National Forest. Please stop by and introduce yourself to Dave.

**CONTACT: JESUS COTA (DC) (202) 205-1600**

### NATIONAL PESTICIDE COORDINATORS MEETING

The 1993 National Pesticide Coordinators meeting will be held November 16 through November 19 in Pittsburgh, Pennsylvania. The meeting will be held at the Hyatt Regency at Chatham Center. The room rate is \$67.57 (single occupancy) which is within the local per diem rate.



The phone number for the Hyatt Regency is (412) 471-1234. A committee to develop the agenda for the meeting has been formed. Dave Thomas, Washington Office, Russell McKinney, R-9, Charlie Hatch, NE, and Paul Mistretta, R-8 will meet on August 19 in Pittsburgh to develop the agenda.

**CONTACT: DAVE THOMAS (DC)**

**(202) 205-1600**

### **DETAIL OPPORTUNITY**

Forest Pest Management, Washington Office, has a detail opportunity open to persons in grades 12/13/14. The detail is to fill the void created with the retirement of Zdenka Horakova (see page 1). Expected duration of the detail is a minimum of 4 months with the possibility later of extending for up to 1 year.

**CONTACT: JESUS COTA (DC)**  
**DAVE THOMAS (DC)**

**(202) 205-1600**  
**(202) 205-1600**

### **PUBLICATIONS AND REPORTS**

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Sundarum, A. 1993. Droplet spreading and penetration of aqueous pesticide droplets in cuticular wax of natural and simulated fir foliage. ASAE Paper No. 931057. *ASAE international summer meeting*, Spokane, Washington.

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The Washington Office, Forest Pest Management, Pesticide-Use Management and Coordination Group writes and distributes this informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Pat Skyler, Editor, USDA Forest Service, 2121C Second Street, Davis, California, 95616 or by DG to P.Skyler:R05H. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.



SHORT SUBJECTS  
AND TIMELY TIPS  
FOR PESTICIDE USERS

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AL WEST'S RETIREMENT

As some of you may know, Al West has retired as Deputy Chief for State and Private Forestry after 37 years with the Forest Service. Al and his wife Joyce will live in California and join the agricultural community by becoming orange growers. Al did not want to say goodbye since he promises to see us from time to time as a Forest Service volunteer. The Forest Pest Management staff wishes them the best of luck in their new venture. A new Deputy Chief has not yet been named. However, Michael Rains is the acting Deputy Chief and Jim Space, Director of FPM, is the acting Associate Deputy Chief. Judy Johnson, (Public Affairs Officer for the Soil Conservation Service) will be acting Director of the Forest Pest Management Staff in Washington, D.C., through July 16. Mel Weiss has been selected as the acting director commencing on July 19.

CONTACT: JESUS COTA (DC)

(202) 205-1600



## HAROLD THISTLE AT MTDC

Harold Thistle has joined the staff at the Missoula Technology Development Center replacing Bob Ekblad who retired. Harold, his wife Gay, and two children moved to Missoula from Connecticut. Harold did his graduate work at the University of Connecticut studying forest canopy meteorology and worked 2-years for TRC Environmental Consultants. In the short time Harold has been at Missoula he has participated in the Utah gypsy moth 1992-1993 programs, presented several papers at meetings of professional societies, participated as a member of FPM steering committees, and supported R-4 FPM and State of Utah in conducting non-target lepidoptera studies. Welcome aboard, Harold!

CONTACT: JACK BARRY (CA) (916) 551-1715

## SUPPLEMENTAL RISK ASSESSMENT FOR NURSERIES

Due to the loss of benomyl, a fungicide used in nurseries, the Forest Service has decided to prepare a Risk Assessment to determine the potential risks of using four replacement fungicides at twelve of its nurseries. The four fungicides to be assessed are thiophanate methyl, iprodione, mancozeb and propiconazole. The risk assessments will be used to amend the existing documents that are part of the Environmental Impact Statements for each of the nurseries. The work will be performed by LaBat Anderson Inc. and will be completed by May 1994. As part of the work task, LaBat Anderson will also prepare Background Statements for each of the fungicides, prepare a Discussion for the Environmental Consequences section of each regional EIS in which benomyl was originally proposed for use and prepare a response document for any public comments on the published draft supplemental EIS's.

CONTACT: JESUS COTA (DC) (202) 205-1600

## DISPOSAL OF SUSPENDED AND CANCELLED PESTICIDES

The U.S. Environmental Protection Agency (EPA) recently filed notice in the Federal Register that they are accepting for storage and the eventual disposal of the pesticide Silvex and other formulations of 2,4,5-T. The pesticides must be in their original container and must have an EPA or USDA registration number. No wastes contaminated with these pesticides are eligible for the program. If you have any of these pesticides currently in storage, please contact Ms. Marsha Collins of the Environmental Protection Agency, Herbicide Branch. Her phone number is (703)305-5534. She will send an application form which must be completed accurately and returned to EPA. If EPA determines the pesticides are eligible, she will send a guidance package on how to get the pesticides to EPA's storage facility in La Port, Texas. EPA will pay for



storage and disposal but not transportation to the storage facility. At this time EPA has not set a date as to when no more suspended or cancelled pesticides will be accepted at their storage facility.

CONTACT: DAVE THOMAS (DC) (202) 205-1600  
KAREN SOLARI (DC) (202) 205-0898

### **DIOXIN DISPOSAL FACILITY**

EPA recently permitted Aptus, Inc., (a Division of Westinghouse) in Coffeyville, Kansas, to incinerate dioxin contaminated materials. The point of contact is Tim Sinback, Westinghouse (412)937-1198. Aptus is permitted to dispose of pentachlorophenol and penta contaminated soil. Their procedure for disposal of dioxins is to first contact Tim Sinback. He will send you a dioxin inquiry form which requests general information on the waste (how much, how was it generated, where is it, etc.). Once this is completed, a local company representative will begin working with you to develop the wastestream profile and to get samples analyzed. After this is done, arrangements will be made for incineration. Aptus, Inc., accepts waste in drums or in bulk. The company provides the transportation. They do not accept dioxin deliveries from other transporters. Westinghouse has an incinerator in Utah which they are also trying to get permitted to incinerate dioxin.

CONTACT: TIM SINBACK (PA) (412) 937-4198

### **PINE SHOOT BORER DISRUPTION**

Pheromone efficacy for pine shoot borer disruption has been repeatedly tested and its utility demonstrated. It has been used operationally by Weyerhaeuser Company on several thousand acres of pine plantations growing for logs. Weyerhaeuser applied the pheromone in hollow fiber by aircraft. It has also been used several times operationally on high value pine stands such as seed orchards, hand applied by lure-tape. Neither of the two formulations is currently registered, although the lure-tape is still available as "trap bait." There is considerable interest in controlling pine shoot borer among seed orchardists if a registered method of treatment were available. The acreage, however, is hardly sufficient to attract a commercial firm to submit for registration so some subsidy would likely be necessary. An alternative treatment, where the lure-tape is part of a trap formulation, might be devised and would not require registration. This is one treatment that would get used if EPA registration requirements were dropped for lepidoptera pheromones.

CONTACT: LONNE SOWER (OR) (503) 750-7377



## NATIONAL STEERING COMMITTEE - SEED, CONE, AND REGENERATION INSECTS

A meeting of the *National Steering Committee - Seed, Cone, and Regeneration Insects* was held in Placerville, California, June 29 - July 1. The meeting was hosted by PSW with Nancy Rappaport making local arrangements and coordinating the field trip. The first two days included presentation of committee member reports, developing goals for a 5-year tactical plan, and identifying research and technology development needs for fiscal year 1994. The third day was spent on a field trip to the Placerville Nursery, Foresthill Seed Orchard, and Institute of Forest Genetics on the Eldorado and Tahoe National Forests. Forest personnel expressed the need for herbicides to control vegetation, insecticides to protect high value seed sources, and pesticides to control greenhouse pests. Committee report with recommendations will be available in August.

CONTACT: JACK BARRY (CA) (916) 551-1715

## NATIONAL STEERING COMMITTEE - SPRAY MODELING

A meeting of the *National Steering Committee - Spray Modeling* (formerly the National Spray Model Advisory Committee) was held June 23-24 at Spokane, Washington, in conjunction with the International Meeting of the American Society of Agricultural Engineers and the Canadian Society of Agricultural Engineers. Committee membership includes Forest Service, academia, States, international partners, and other federal agencies. Purpose of the meeting was to review past year activities and results, discuss model applications, identify development needs and begin developing a 5-year tactical plan. Committee report with recommendations will be available in August.

CONTACT: JACK BARRY (CA) (916) 551-1715

## NATIONAL SILVICULTURE WORKSHOP SCHEDULED

The 1993 National Silviculture Workshop will be held November 1-4 at the Kanuga Conference Center, Asheville, North Carolina. In addition to other topics, papers will be presented on pesticide-use and ecosystem management. For additional information contact Dennis Murphy in WO/EM.

CONTACT: DENNIS MURPHY (DC) (202) 205-1751



## EXOTIC SPECIES CONTROL IN WILDERNESS

Several exotic plant species have severely impacted native ecosystems as well as agricultural lands in the northern Rockies and intermountain west. Several of these species have been designated as noxious weeds under State and Federal laws. These designated noxious weeds include the knapweeds (spotted, diffuse, and Russian), leafy spurge, Canada thistle, yellowstar thistle, and others. Studies in Glacier National Park and on National Forest system lands have shown that spotted knapweed and leafy spurge can displace 80 percent or more of the native species on infested sites. As such these species provide a serious threat to the concept of wilderness as an area "which is protected and managed so as to preserve its natural conditions" (Wilderness Act, 1964). The managers of several Northern Region wilderness areas including the Lee Metcalf, Absaroka-Beartooth, and Bob Marshall Complex, have initiated active, integrated programs to counteract this threat. These programs include requirements for use of weed-seed free forage in the backcountry and treatment of infestations in the wilderness with manual, biological, and chemical methods. The Flathead National Forest recently issued an EIS and ROD to control weeds on 108 sites in the Bob Marshall Wilderness Complex.

CONTACT: ED MONNIG (MT) (406) 329-3134

## MISSOULA TECHNOLOGY DEVELOPMENT CENTER

Forest Pest Management (FPM) is many things to many people and organizations but it lacks engineering skills to do equipment designs and engineering testing. Missoula Technology Development Center (MTDC) provides a unique Forest Service resource to support FPM in its multiple activities - GPS, sprayer development and testing, computer modeling, pheromone application, trap designs, sampling equipment, and instrumentation. FPM has a program at MTDC that is guided by a 5-year plan. If you would like additional information, have any questions, or engineering needs -

CONTACT: HAROLD THISTLE (MT) (406) 329-3981  
DAVE RISING (MT) (406) 329-3904  
JACK BARRY (CA) (916) 551-1715



## PROTECTING WILD STAND SEED SOURCES

High demand for rust resistant sugar pine seed was the motivation for a study on the Sierra NF, Pineridge Ranger District (CA). The purpose of the study was to investigate the feasibility of installing a semi-permanent spray system in high value seed collection trees. Tree size, location, and environmental considerations generally preclude traditional insecticide application methods. Tom Catchpole (Pineridge RD) requested assistance and Nancy Rappaport (PSW) responded. Diane Hertzberg (MTDC) designed, tested, and installed a tree sprayer for use by Tom in applying Asana during the summer on the replicated study. MTDC responded with about 6-weeks notice. Results are encouraging - stay tuned.

CONTACT: NANCY RAPPAPORT (CA) (510) 559-6474  
JACK BARRY (CA) (916) 551-1715

## NON-TARGET LEPIDOPTERA BT EFFECTS

Region 4 is evaluating the feasibility of a procedure to determine effects of Bt on non-target lepidoptera. A study conducted in conjunction with the 1993 Utah gypsy moth eradication project involves feeding two species of field collected lepidoptera host foliage that had been exposed to Bt in the field at various distances downwind from the treatment area. The amount of Bt on the foliage was measured in order to calculate the amount of Bt consumed by the lepidoptera. Preliminary results suggest the procedure may be a feasible approach. A report is due this fall.

CONTACT: JOHN ANHOLD (UT) (801) 476-9732



## ATTENTION TO PESTICIDE DATA GAPS - NAPIAP 1994

Zdenka Horakova has detailed pesticide data gaps that need attention in the short term (see NAPIAP call letter of June 4). The categories are summarized as follows:

- o Environmental fate and impact of forest-use pesticides.
- o Human exposure.
- o Factors related to pesticide reduced efficacy and increased resistance.
- o Application technology especially biological and biorational materials to reduce environmental insult.
- o Methyl Bromide - all environmental aspects.
- o Highest priority should be given to the following pesticides:

Methyl Bromide  
Methyl Bromide alternatives  
Chloropicrin  
2,4-D (metabolism, biomarkers, benefits)  
Nursery and seed orchard pesticides  
Bacillus thuringiensis (Bt)  
Diflubenzuron (Dimilin)  
Glyphosate  
Hexazinone  
Imazapyr  
Sulfamethuron methyl  
Trichlopyr

- o Proposal aimed at developing alternatives to registered pesticides or at developing new uses of registered pesticides cannot be supported by NAPIAP funds.

CONTACT: ZDENKA HORAKOVA (DC)

(202) 205-1600



## AERIAL SPRAYING BY COMPUTER - NEW ZEALAND STYLE

New Zealand (NZ) foresters have adapted the Forest Service FSCBG model as a tool to improve aerial application. Saddled with the same environmental constraints as United States foresters, NZ cannot afford to give up on broadcast spraying. Quoting from Richardson and Ray (1993) -

"Aerial spraying is frequently used in New Zealand to control weeds, because the size of the blocks to be sprayed and the terrain make it difficult or uneconomical to use ground application methods. Although broadcast aerial spraying makes it possible to control weeds efficiently on a large scale, the spray may be carried in the air and drift away from the area being treated. Thus, spray operators must use technology that will maximise spray deposition on the target weeds while minimising off-target drift."

Richardson and Ray concluded -

"The development of a PC-based aerial application simulation model (FSCBG) has taken aerial spraying from an art to a science. Operating decisions to improve spraying efficiency and protect the environment can now be based on predictions from a valid computer model. In both forestry and agriculture, the role of aerial application simulation models, and other management decision support systems, is likely to increase . . ."

CONTACT: BRIAN RICHARDSON (NZ)  
JACK BARRY (CA)

011-64-7-347-5516  
(916) 551-1715

## ADVANCED FOREST HERBICIDE COURSE

Forty participants attended the first annual Advanced Forest Herbicides Course in Sault Ste Marie, Ontario in September 1992. The course was a joint effort amongst the Forest Pest Management Institute, the Ontario Forest Research Institute's Vegetation Management Alternatives Program and the University of Guelph. The course involved 1 week of classroom instruction as well as a week of field excursions into the surrounding area. The course was divided into six modules taught by instructors from across Canada, the United States, and New Zealand:

- (1) *Basic Pesticides*: a refresher on the basics of pesticide use and management.
- (2) *Forest Herbicides*: an in-depth look at the principal herbicides currently registered for use in Canadian forestry.
- (3) *Application Technology*: instruction in the fundamentals of ground and aerial application. A module on the use of pesticide drift models including FSCBG introduced the participants to the value of models in planning and potentially evaluating the spray program.



- (4) *Vegetation Management*: a review of weed and crop ecology and discussion of vegetation management strategies.
- (5) *Environmental Impact*: effects of forest herbicides on the various components of the forest ecosystem.
- (6) *Program Management*: the operational aspects of running a safe and effective herbicide program and maintaining public credibility.

In addition, students worked on a practicum throughout the course to apply what they had learned to specific situations.

The course will be offered from September 27 to October 8, 1993.

CONTACT: CRAIG HOWARD (CANADA) (705) 949-9461  
 BOB MICKLE (CANADA) (416) 739-4851

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CONTACT: PAT SKYLER (CA)

(916) 551-1715

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